SUPPLEMENT
TO THE
British Medical Journal

LONDON: JANUARY 17TH, 1891.

A WEEKLY EPITOME
OF
CURRENT MEDICAL LITERATURE.

MEDICINE.

(51) A Case of Chylothorax.

An interesting case of chylothorax is reported (*St. Petersburger medicinische Wochenschrift*, No. 51, 1890) by Dr. Neuenkirchen, from the wards of Dr. P. Hampeln, in the Allgemeine Krankenhaus, at Riga. Very few cases of the kind are on record, but all those hitherto observed have tended to prove that the disease is generally brought about by direct injury, and that the condition is rapidly fatal in its results. Chylous ascites is more common, and is generally produced by pressure upon some part of the thoracic duct causing rupture of it or some afferent lymphatic vessel which has become dilated. In the case recorded, that of a single lady, aged 45, the patient's previous history threw no light upon the causation of the disease, and the only symptom produced was that of dyspnœa, at first only on exertion, but afterwards continuous when in absolute rest. This appeared in 1884, and fluid, described as "milky," was at that time removed from the left pleura to the amount of about a litre, giving complete relief to the dyspnœa. The patient remained free from dyspnœa, or any other trouble, till December, 1888, when the breathing again became embarrassed, but no other symptoms showed themselves until six months later, when gradual loss of strength was complained of, and slight œdema of the feet was noticed. It was then found that the left side of the chest was nearly normal as regards its physical signs, but that fluid had collected in the right pleura. With this exception the most searching clinical examination failed to show any other abnormality. The right pleura was tapped with an ordinary trochar and siphon tube, and the lung expanded as the fluid was withdrawn; some degree of pain and collapse being caused, which soon subsided under stimulants. The fluid, as before, had a milky appearance and, on standing, became covered with a layer of creamy consistence. Microscopically it consisted of molecular granules, scattered round cells, and a few blood corpuscles, but no actual fat cells. By chemical examination it was found to be alkaline, specific gravity 1017, and to contain water, traces of casein, albumen, fat, sugar of milk, and salts. The exact quantitative proportions of each are given in detail. The patient was tapped several times, until it was found that reaccumulation seemed to be aided by the frequent tapping, and it was thought that the reduction of pressure within the pleura might be having the effect of drawing out the chylous fluid from its natural channels. It was therefore left to itself. The patient in the mean time is enjoying good health, the only new feature in the case being cessation of menses, which has been present since the first tapping in 1889. The various possibilities as to the pathological changes in the thoracic lymph channels in this case are very fully discussed by Dr. Neuenkirchen, advantage being taken of the opinions expressed by other writers, but no conclusion is arrived at, owing to the complete absence of any clinical indications. He classes the case as one of hydrops chylosus.

(52) Two New Hæmatozoa.

Dr. Patrick Manson has found in certain negroes of the West Coast of Africa two species of filarial hæmatozoa which he believes to be new. He proposes (*Lancet*, January 3rd, 1891) to apply to them the names filaria sanguinis hominis major and minor respectively. The former very closely resembles the Indo-Chinese filaria sanguinis hominis (Lewis), the differences being only that it has a more delicate investing sheath, more marked oral movements, and has not the granular aggregation frequently seen about the middle of the body in the other species. Like Lewis's species, the new species appears in the blood only at a certain period during the twenty-four hours, but this period is the day, while in Lewis's species it is the night. Dr. Manson admits that this filaria sanguinis hominis major, which he has found in two cases, may turn out to be an abnormal Lewis's filaria, but he does not think this probable. There seems to be even less doubt as to the specific distinction of the other filarial embryo; it was found in four out of five negroes examined (two from the Congo and three from Old Calabar). In two cases it was associated with filaria sanguinis hominis major. Filaria sanguinis hominis minor is roughly about one-third smaller than the larger species (f. major and Lewis's filaria measure $\frac{1}{80}$ in. $\times \frac{1}{33\frac{1}{33}}$ in., f. minor $\frac{1}{120}$ in. $\times \frac{1}{33\frac{1}{33}}$). The smaller species has no sheath; the caudal end is truncated, the cephalic end is alternately conical and truncated, the change from one to the other being by rapid jerks. A minute tongue-like organ is from time to time protruded and withdrawn at the cephalic extremity, and the filaria minor has a very distinct locomotive power. Finally, the appearance of this embryo in the blood is not periodic, but continuous. The observation of the nocturnal periodicity of the Lewis filaria led to the suggestion that the intermediate host was a night-flying

nsect, and Dr. Manson has shown that the mosquito is the host. He now suggests that the intermediate host of filaria sanguinis hominis major is a diurnal insect, probably limited in distribution to particular districts of West Africa. The parent worm was not found in the only case in which a *post-mortem* examination has been made, so that its location is a matter of conjecture only. As to two of the cases in which filaria sanguinis hominis minor was found, one was the case of negro-lethargy exhibited at the Clinical Society by Dr. Stephen Mackenzie on November 14th, 1890 (BRITISH MEDICAL JOURNAL, November 22nd, 1890), the other was another Congo negro under restraint on account of noisy insanity—possibly a maniacal variety of negro-lethargy. Dr. Manson is disposed to suggest a possible connection between the parasite and negro-lethargy on the following grounds:—Craw-craw, a papulo-vesicular disease found in negroes is associated with the presence of filarial embryos hitherto assumed without careful examination to belong to Lewis's species; a similar eruption is stated by some authorities to occur frequently in negro-lethargy; craw-craw and negro-lethargy have the same endemic area. The theory would perhaps account for the onset of negro-lethargy long after the sufferer has left the endemic area, since the filaria persists for years in the blood; in one of the cases examined by Dr. Manson the patient had been absent from Africa for 6½ years.

(53) Trophic Changes in the Nails in Multiple Neuritis.

BIELSCHOWSKY (*Neurologisches Centralblatt*, December 15th, 1890, p. 741) describes a man, aged 40, who presented the symptoms of peripheral neuritis. In the course of the illness several white spots appeared at the lower part of the finger nails. They rapidly grew, and in two or three weeks there were milk-white patches stretching across the nail. There were no similar changes in the nails of the toes. Except for these alterations, there were no other changes in the nails. There was not the loss of smoothness which has been described. The streaks across the nail remained milk white in the middle, but became reddish towards the ends. The borders of the depressed streaks were straight. When these streaks had grown near enough to the end of the nail they were cut off. The microscopical examination did not show anything of importance.

SURGERY.

(54) Vesical Calculus in Women.

DR. PHOCAS (*Annales de Gynéc.*, November, 1890) has collected numerous cases of spontaneous expulsion of vesical calculus in women, and notes that authorities admit that the female urethra may be dilated to a considerable extent without consequent incontinence of urine. Simon, of Heidelberg, was a great advocate of dilatation in cases of calculus. Heydenreich, reviewing the question as late as 1887, gave the preference to dilatation over other operations in all cases where the diameter of the calculus did not exceed 3 centimètres (1.17 inch). Dr. Phocas dwells on the fact that calculi are often expelled spontaneously. A woman, aged 80, passed 500 small calculi in three years. At first incontinence of urine was complete; it diminished after a time. A woman, aged 70, after suffering for several months from dysuria, spontaneously expelled by the urethra an oval calculus "the size of an almond," and nearly a quarter of an ounce in weight; no incontinence of urine ensued. A woman, aged 54, expelled, according to Barbieri, a calculus "the size of a hen's egg." On the other hand, Bergioni relates that a little girl, aged 4, expelled several calculi spontaneously; and similar cases have been recorded. Again, the expulsion of calculi during labour has frequently occurred. Thus calculi are most frequently expelled spontaneously in very young or in very old patients, or during labour, and incontinence of urine may result, especially if the calculus exceeds an inch in diameter. The muscular fibres around the neck of the bladder are weak in childhood and old age, and thus allow more readily of the passage of calculi. The calculus is either expelled rapidly after an attack of retention of urine, the fluid and the vesical contractions together aiding in the process, or is pressed slowly out by a gradual dilatation of the urethra lasting several days. In the first case the urethra may be seriously damaged; in the second, the process resembles slow dilatation, such as surgeons effect by aid of laminaria tents. The stone may be forced through the vesico-vaginal septum. Dr. Phocas concludes from the above observations that the process of spontaneous expulsion must be regulated or imitated by the operator. Dilatation of the urethra effects this object, and the process can be controlled, which is not the case if matters be left to Nature.

MIDWIFERY AND DISEASES OF WOMEN.

(55) Puerperal Convulsions.

DR. ALEXANDER PILLIET (*Nouvelles Arch. d'Obstét.*, November, 1890) lays great stress upon the hæmorrhagic foci which are found in the livers of women after death from puerperal eclampsia. He implies that the hepatic lesion is primary, and that this pathological discovery must modify our opinions and our treatment of one of the gravest complications of childbed. Twelve necropsies have been made by this obstetrician, and in all the characteristic changes in the liver were detected. This series does not include any case of cholemic eclampsia or hepatic anæmia of pregnancy and the puerperium; and in the twelve, icterus, where it occurred, was slight, and appeared after the other distinct symptoms. The hæmorrhagic focus in the tissue of the liver is no mere product of simple engorgement of a vessel followed by rupture. It is associated with complicated local pathological changes, minutely described by Dr. Pilliet. In certain respects these foci resemble similar appearances observed in the kidney in scarlatinal and erysipelatous nephritis. The most careful search, however, has failed to detect any bacteria in the foci in Dr. Pilliet's twelve cases. He maintains that since a distinct and severe lesion of the liver was found in every one of the twelve cases of death from puerperal convulsions, it is reasonable to suppose that the lesion is pathognomonic of the complication in question. Lastly, it must here be noted that in the cases in Dr. Pilliet's series where the condition of the kidney is recorded, that organ is described as though not in a perfectly normal condition. He also detected pulmonary and cerebral hæmorrhages in more than one of the twelve necropsies.

(56) Therapeutic Dilatation of the Uterus.

Dr. Vulliet, of Geneva (*Annales de Gynécol.*, October, 1890) exhibited at the Berlin Congress a series of casts of the uterine cavity taken from the living subject after dilatation. The practice of dilating the uterine cavity is useful for treatment and for diagnosis. It can be performed so that the uterine cavity may be inspected by the naked eye. Dr. Vulliet's process permits the dilatation to be maintained as long as necessary, so that any one point in the uterine wall may be observed for a time when immediate diagnosis is impracticable. As to therapeutics, dilatation allows the plugging of the uterine cavity, which provides for drainage, and is worthy of trial in chronic inflammatory conditions. The endometrium is rendered accessible to local treatment, such as injections, application of powdered compounds on gauze, scraping, and cauterisation. Free dilatation of the uterine cavity facilitates the incision of intraparietal fibroids, and assists their expulsion or removal through the natural passages. The tampon applied after dilatation may serve to rectify displacements. By introducing the fingers into the dilated cavity, external uterine adhesions may be broken down after Schultze's method. Lastly, the tampon introduced into the dilated uterine cavity can act as a hæmostatic, either in cases of bleeding fibroids or after labour.

(57) Bromides in Vomiting of Pregnancy.

Dr. Wertheimer, of Freiburg (*Centralbl. f. Gynäk.*, December 20th, 1890), describes the case of a woman, aged 33, who had borne eight children, and who had required artificial abortion at the third and fourth month respectively in two labours, on account of uncontrollable vomiting. She once more became pregnant, and violent sickness set in only fourteen days after conception. No nourishment could be taken, and she soon became dangerously exhausted. Belladonna and morphine failed to influence the sickness. Bromide of potassium checked it slightly. Dr. Wertheimer then gave, every two hours, half an ounce of a mixture consisting of three parts of bicarbonate of soda, two of bromide of potassium, two of bromide of sodium, and one of bromide of ammonium, disolved in thirty parts of syrup of orange peel, and one hundred and twenty of distilled water. The vomiting ceased, the patient's strength increased, and, at the time of the report, the patient had passed the fifth month of pregnancy without any return of the sickness.

(58) Atresia: Hæmatometra: Castration.

Dr. Mattersdorf (*Centralbl. f. Gynäk.*, December 6th, 1890), describes a case of atresia of the lower part of the vagina, with the usual effects of retention of menses, where, ultimately, removal of the ovaries was deemed necessary. A girl, aged 20, had never menstruated; she was subject to severe pains in the hypogastrium. A tumour reached the umbilicus, a smaller growth lay beside it, and the uterus projected. The lower part of the vagina was absent. The vagina was carefully opened, and a quart of thick blood removed. After four years the patient returned with distinct hæmatometra. It was emptied by an incision made from the vagina. Then the ovaries were removed. The patient never menstruated after the operation. Hegar and Kaltenbach have already insisted that castration is necessary in certain congenital conditions where the ovaries are present and exercise their functions so as to give pain, and more particularly when deficient development of the uterus and vagina prevents the escape of menstrual blood. Ten cases have been recorded by different observers, but only one resembled the example noted by Dr. Mattersdorf, of Breslau. The operator was Kaltenbach, and the patient died after the removal of her ovaries.

(59) Treatment of Placenta Praevia.

Drs. W. J. Kolff and Treub (*Nouvelles Archiv. d'Obstet.*, September, 1890) record the results of this malpresentation, as observed by them at Leyden. Between 1856 and 1879 26 cases of placenta praevia were noted by Dr. Kolff, with a mortality of 42 per cent. On the other hand, between 1887 and 1889 Professor Treub has observed 13 cases. In all of this series he performed combined version, losing only 1 patient. The fatal case cannot fairly be attributed to the method of delivery, for the woman died of pyæmic phlebitis, set up by a dirty sponge which the midwife introduced into the vagina to check the hæmorrhage before version was performed. Hence the mortality did not amount to 8 per. cent. Of the children, 8 (or .61 per cent.) died, but 4 must be subtracted, as the heart sounds could not be heard before version; thus the precise mortality was 30 per cent. During childbed bad results were observed only in cases that had been previously examined by midwives, except in one instance, where the vagina had been plugged with sterilised absorbent gauze instead of iodoform gauze. The great principle of practice at Leyden is to separate version from extraction. The former is undertaken in order to save the mother. It is only in cases of subsequent hæmorrhage that extraction by the feet is carefully undertaken. Dr. Kolff praises that practice, as it renders interference practicable very early in the labour, before the mother is exhausted by hæmorrhage, saves her from the risks of prolonged plugging, and allows the later part of labour to continue slowly and yet without danger. The risk of *post-partum* hæmorrhage is thus greatly lessened. The risk to the child is theoretically great, yet the above statistics prove that the infantile mortality is not very high.

DISEASES OF CHILDREN.

(60) Purpura Fulminans.

Dr. Henry Jackson, of Boston, has reported (*Archives of Pediatrics*, December, 1890) a fatal case of acute purpura apparently belonging to the class of cases to which Henoch has applied the term purpura fulminans, but differing in certain respects. Henoch's cases were characterised by (1) sudden onset; (2) pains in one or more limbs; (3) often purple œdematous swelling of lower, or more rarely upper, limbs; (4) absence of hæmorrhage from mucous membranes; (5) death in one, two, three, or four days. In Dr. Jackson's case there were no pains in the limbs, and there was extensive hæmorrhage from mucous surfaces, epistaxis, vomiting of blood, and passage of blood from bladder and bowels. The patient was a boy, aged 5 years, who about a month after a mild attack of measles, and while apparently in good health, had been indisposed for a couple of days; on the next day a few hæmorrhagic spots were first noticed; on the next day the child was first seen by Dr. Jackson; he was able to run about, and the only noticeable abnormalities were hæmorrhagic spots on the legs and back (several

half an inch in diameter) and a small hæmorrhagic bulla on the lower lip. The temperature rose to 100° F. at night, and the severe mucous hæmorrhages mentioned above began on the third day; on the fourth the hæmorrhages continued, the temperature was subnormal, the pulse hardly perceptible, and the patient appeared moribund. He died the next day, but before death the hæmorrhagic spots had increased in number, and on the legs had formed large patches by confluence. Dr. Jackson concludes that the disease is due to some lesion of the vasomotor nerves, probably produced by micro-organisms. In this connection he refers to the investigations of de Guimard (*Thèse de Paris*, 1889), who in cases of purpura, mild as well as severe, found micrococci in the blood and submucous and subcutaneous tissues, obtained cultures of the cocci, and reproduced purpura in rabbits by inoculating them with these cultures. In the discussion which followed the reading of Dr. Jackson's paper at the American Pediatric Society, all the speakers confessed that treatment had never been of any avail in these severe cases of purpura.

(61) Antipyrin in Chorea.

In a paper recently read before the Société Médicale des Hôpitaux de Paris (*Bull. et Mém.*, December 25th, 1890), Dr. Charles Legroux states the results of the treatment of chorea by antipyrin in sixty cases observed throughout their course. He found that antipyrin had a beneficial effect in two-thirds of the cases, rapidly diminishing the intensity of the disease, and shortening its duration; recurrence, however, took place in three-fifths of the cases. In the cases in which the drug failed this was found to be due in some instances to intolerance (vomiting, diarrhœa, etc.), or to cutaneous eruptions; in a few cases the drug appeared to have no effect on the disease. He found it necessary to give large doses, and to reach the maximum dose in a short time. Between the ages of 6 and 15 doses as high as 3 to 6 grammes (about ℥ iss to ℥ iij) a day were well tolerated for several weeks. Serious symptoms of poisoning were never observed, and in some cases in which an eruption or vomiting was at first noticed, when the use of the drug was resumed after a short interval these symptoms did not recur. None of the cases treated had any rheumatic symptoms, but none were of a serious character.

(62) Treatment of Foreign Bodies in the Larynx and Œsophagus.

In a lecture on foreign bodies in the larynx and in the trachea in children (*Rev. Mens. des Mal. de l'Enfance*, January, 1891) M. Jules Simon expresses the opinion that if the diagnosis is certain, and if the surgeon cannot remain in attendance, the proper treatment is to perform tracheotomy. Further, he holds that the operation ought not to be deferred if the foreign body is of irregular shape (fish bones, nails) or liable to swell (peas, beans, etc.). The trachea should be freely opened, and at a rather lower level than usual; before introducing the tube the child should be placed in various positions while the wound is held open, in the hope that the foreign body may be immediately expelled. Even when this occurs he recommends that the tube should be worn for several days at least, as it checks hæmorrhage and tends to prevent subcutaneous emphysema. The diagnostic symptoms of foreign body in the larynx he considers to be: sudden onset, dyspnœa without alteration of the voice, and the absence of angina. He gives the above advice as to tracheotomy after reporting and discussing a case in which a boy aged 6 spontaneously expelled, during the act of vomiting, a portion of the antenna of a lobster which had entered the larynx during an attack of coughing three or four weeks earlier. Such a termination is, however, he holds so rare that it ought not to affect the judgment. In the same number of this periodical is a short note by Dr. B. Polikier, of Warsaw, on a simple manœuvre by which he succeeded in two cases in obtaining the immediate expulsion of a coin—in each case about the size of a halfpenny—which had become impacted in the œsophagus, and had given rise to dyspnœa. In both cases it was easy to feel the coin externally by pressing the finger gently into the groove between the sterno-mastoid muscle and the trachea. Gentle rubbing and kneading over the coin, the fingers making gentle pressure upwards and a little backwards, was followed in a few seconds by an act of vomiting, during which the coin was expelled. In the first case the uvula was tickled at the same time, but the second case showed that this was unnecessary.

(63) The Capacity of the Stomach in Nursing Infants.

A paper upon the capacity of the stomach in infancy has been published in the *Archives of Pediatrics* (December, 1890) by Dr. L. Emmett Holt. The observations upon which the paper is founded were made *post mortem*. One orifice of the stomach, usually the pyloric, was closed by a ligature, and water introduced into the other opening by means of a piece of rubber tubing attached to a faucet, at the other end of which was a glass nozzle, which was passed into the stomach, the cardiac orifice being pinched tightly around this by the fingers. After the contents had been evacuated the water was allowed to flow very slowly, and the stomach distended up to the point of obliterating the rugæ of the fundus and body of the organ. The walls in infants are so thin that it was found not difficult to determine when the proper degree was reached by looking through the stomach at a strong light. Owing to the very various conditions in which the stomach was found after death, it was found that it would be misleading to make use in every case of the same hydrostatic pressure, and in cases in which the organ was very much relaxed it was allowed to remain for a day or two in 50 per cent. alcohol. If this precaution were not taken the bagging from the weight of water gave results which were obviously incorrect. The number of cases in which the measurement was made was 142, but Dr. Holt excludes 30 cases in which the method was untrustworthy, and, of the remaining 112, 95 were infants under 14 months old. The conclusions of the paper are founded on 91 of these cases, 4 being excluded on the ground that their unusual capacity almost certainly indicated pathological dilatation, and the object of the research being to discover the average capacity in health. Though the cause of death and the general state of nutrition in the children were very different in various cases, it was easy to detect a general correspondence between the age and the capacity of the stomach, and the general conclusions were as follows: (1) Starting at birth with a capacity of about one ounce, the stomach increases in size at the rate of one ounce a month during the first three months, reaching at this

time about one-half the capacity found at one year. (2) From three to eight months its growth is much slower, being, on the average, about half an ounce a month. (3) From eight to fourteen months the rate of growth is still less, being, on the average, about one-third of an ounce a month. Approximately, at the ages of one, three, six, and fourteen months the average capacity is respectively one, four and a half, six, and nine ounces. No correspondence could be traced between the weight of the child and the capacity of the stomach. Dr. Holt pointed out the remarkable agreement between his results as to the capacity of the stomach and Dr. Rotch's observations (*Keating's Cyclopædia*) as to the quantity of food for a single feeding at different ages, although the two sets of results were arrived at by entirely different methods.

PHARMACOLOGY AND THERAPEUTICS.

(64) Combination of Operative Treatment with Koch's Remedy in Phthisis.

Professor Sonnenburg has published (*Deutsche med. Wochenschr.*, January 1st, 1891) a preliminary report on the results of the combination of operative interference with injections of Koch's fluid in four cases of pulmonary phthisis. The operations were performed in the presence of Koch himself in the Moabit Hospital at Berlin between December 12th and 17th, 1890. The object was to test the practicability of treating cavities of the lungs by making an opening from the outside through which necrosed tissues might be eliminated, and then applying Koch's method in the usual way. In three of the cases there was a cavity in one apex, in the fourth the vomica was lower down but very superficial. In the former the anterior wall of the cavity was firmly adherent over a large surface to the costal pleura, so that the cavity could be opened without any risk of pneumothorax. The following is the mode of procedure adopted: — Chloroform having been administered, an incision is made beginning at the sternum and extending outwards from 10 to 12 centimètres, in a direction parallel to, but from 1½ to 2 centimètres below, the clavicle. The pectoralis major is next divided, and, the soft parts being held aside with retractors, the lower edge of the first rib is laid bare. The periosteum is then detached from the anterior and posterior surfaces of the first ribs with blunt instruments so as to avoid wounding the intercostal artery. A broad retractor is then passed between the posterior layer of periosteum and the pleura so as to protect the latter from injury, and an arched segment is cut out of the lower border of the rib with cutting forceps. By this means the intercostal space is enlarged, and the pleura is next exposed by careful separation of the muscular fibres. An exploratory puncture is then made into the lung with a small syringe, which usually enters the cavity, as is shown by the escape of a certain amount of pus. The opening made by the syringe is next carefully enlarged with a fine pointed thermocautery, red hot, which is pushed slowly along the track of the exploring needle into the vomica. When the cavity is reached a little thick muco-pus generally wells up in the bottom of the wound. The opening having been somewhat enlarged with the thermocautery, both the cavity and the wound are stuffed with sterilised cotton. Sonnenburg at first used iodoform wool for this purpose, but discontinued its use so that the effect of Koch's fluid might be ascertained apart from that of the iodoform. The three patients with cavities at the apex bore the operation well, and the subcutaneous injections of Koch's fluid were soon afterwards proceeded with. It is too early to judge of the results, but, so far, they do not appear to be very striking. In the fourth case, the lung was not adherent to the pleura, and the opening into the cavity was followed by the development of pneumothorax. The patient however recovered from this and the lung is now fixed to the chest wall by pleuritic adhesions.

(65) Koch's Treatment in Tuberculosis of the Female Genitals.

At a meeting of the Royal Academy of Medicine of Turin, Professor Bossi communicated some observations made by him in the obstetric clinic at Genoa (*Il Policlinico*, December 23rd, 1890). He was led to try Koch's method in cases of tuberculous affections of the female genitals (including the uterus and Fallopian tubes), as the necrotic tissues could easily be thrown off or removed from these parts. He also thought it possible that by inoculating a pregnant woman with Koch's lymph immunity against tubercle might be conferred on the fœtus in the same way as he (Bossi) had found, by experiments made last year, that vaccine lymph which caused pustules in pregnant women produced no effect when inoculated in the child after birth. The following is a summary of the cases in which Bossi employed the new treatment: Case i, woman, aged 27, with a history of fourteen pregnancies and thirteen miscarriages. Tuberculous disease of the uterus was suspected, but no bacilli could be detected. On December 5th, 3 milligrammes of Koch's fluid were injected, and reaction followed in the usual way, the local symptoms being particularly severe (intense pains in the loins shooting first to the lower part of the abdomen, then down the thighs to the feet). The injection was repeated next day with a like result: this time there was a profuse discharge from the uterus of pus containing numerous tubercle bacilli. The temperature remained somewhat high for five or six days afterwards, though no further injections were given; the violent pain in the abdomen and meteorism from which she suffered seemed to point to the existence of peritonitis: finally, however, the uterus diminished in size to a marked extent. Case ii, woman, aged 39; twelve pregnancies and seven abortions. She was treated for hyperplastic endometritis, but after having obtained relief from curetting and cauterisation of the uterus with chloride of zinc (50 per cent.), she returned in as bad a condition as before. As there was a tuberculous focus in the left lung, 1 milligramme of Koch's fluid was injected; little or no result followed. The next day an injection of 3 milligrammes gave rise to marked general and local reaction, the latter consisting of sacro-lumbar pains exactly like those of dysmenorrhœa. The tubercle bacillus, which was at first absent, was found in large numbers in the uterine discharge as well as in the sputum. After a third injection of 5, and a fourth of 7 milligrammes, the cavity of the uterus diminished in size by 1½ centimètre, and the ulceration of the cervical canal had almost entirely disappeared. Case iii, woman, aged 66, with an ulcerated tumour of the vagina, diagnosed as epithelioma of the labium majus, although the disease had lasted

eighteen months, and there were no enlarged glands. By way of experiment, an injection of 5 milligrammes was given, and was followed by violent reaction; the tumour became swollen, and assumed an intense livid red hue; round it was a wide inflammatory halo, and the part became the seat of such acute pain that it was feared the case was about to take a very unfavourable turn. The symptoms, however, subsided within twelve hours. A second injection was followed by equally intense reaction, accompanied by abundant fœtid discharge from the ulcerated surface; in this, numerous tubercle bacilli were found. Further injections of 5 and 7 milligrammes were given, and after 34 milligrammes in all had been used, the tumour was found to have diminished in size by two-thirds. Case iv, girl, aged 17, with extensive ulcerated lupus of left cheek; four months pregnant. Injection of 3 milligrammes; slight reaction. Further injections up to 23 milligrammes in all were given, with the result that the ulcers were completely cicatrised. The treatment did not seem to affect the uterus or its contents in any way. Nos. v and vi were control cases. One patient was the subject of chronic metritis, the other a pregnant woman suffering from syphilis. In neither did any reaction follow the injection. Bossi thinks the fluid will prove "most useful in gynæcology as a means of diagnosing tuberculous lesions of the uterus;" and from his experience, it seems to give good therapeutic results without interfering with pregnancy or injuring the embryo.

---

(66) Post-mortem Appearances after Koch's Treatment.

Professor Chiari, of Prague, gives (*Prag. med. Wochenschr.*, No. 52, 1890) the results of *post-mortem* examinations made by him in three cases of phthisis in which Koch's treatment had been employed. In all the tuberculous foci in the lungs there was great accumulation of leucocytes, with considerable fibrinous exudation round about. In the affected parts of the lungs, and in tuberculous ulcers in the intestine, there was marked hyperæmia, and in some instances signs of hæmorrhage. There were large masses of tubercle bacilli in the bronchial tubes, and on the bases of the intestinal ulcers. In short, the appearances indicated abnormal exudative inflammation around the tuberculous foci, and (perhaps in connection with this process) a tendency to the expulsion of tubercle bacilli in the lungs and intestine. Chiari's observations on the whole agree with those of Cornil as to the effects of Koch's treatment in lupus. They seem to show that reactive changes such as hyperæmia, occasionally causing hæmorrhage, infiltration of leucocytes, and exudation take place in the tuberculous foci in the lungs in the same way, though not to the same degree, as they do in the skin. Further observations over an extensive field, and in particular careful comparison of the *post-mortem* appearances found in cases subjected to Koch's treatment with those in other cases are, according to Chiari, necessary before any general conclusions as to the exact effect of the remedy can be drawn.

At a meeting of the Berlin Society of Internal Medicine, on December 14th, Dr. Jürgens (*Wien. med. Wochenschr.*, January 3rd, 1891) presented a report on the results of *post-mortem* examinations in two cases of tuberculosis in which Koch's treatment had been used. Both patients were under the care of Professor Leyden, and in both the disease was so far advanced that there was no prospect of cure. In the first (a man suffering from extensive pulmonary phthisis with severe pleurisy) several injections, from 1 up to 6 milligrammes had been given, always with the result of producing very marked, though not alarming, reaction; the expectoration became gradually more and more bloodstained, and contained numbers of bacilli. In the second case, a woman suffering from very advanced phthisis with dropsy and albuminuria had been injected eight times, the doses ranging from 1 milligramme to 4 centigrammes. In both cases the changes in the lungs were so widespread that only very small portions of those organs remained permeable to air. The tuberculous foci themselves presented no naked-eye appearances which could be attributed to the specific action of the remedy; this, however, was due, according to Jürgens, to the fact that the greater part of the lung tissue was destroyed by the disease. On the walls of the cavities he saw signs of hæmorrhagic hyperæmia, but no trace of caseous substance. The pleurisy was of recent origin, and there was much sero-sanguinolent exudation. The tuberculous ulcers in the alimentary canal presented a remarkable appearance. In place of a greyish base with red and swollen edges, they showed a surface covered with recent and very vascular granulations. The tuberculous ulcers in the larynx also differed much from the ordinary type. In short, the tuberculous ulcers generally had lost their specific character, and had become transformed into simple ulcers. Where the ulcers had attacked cartilage, as for instance in the tracheal rings, a similar process had also been set up, the necrosed cartilage had come away, and the ulcer had healed. In the stomach, small and great intestine, and rectum, the tuberculous ulcers, though exhibiting numerous individual differences in detail, presented this common feature that in all of them the specific neoplasm had been eliminated and replaced by ulceration of benign character. In one of the patients who had tuberculosis of the kidney, that organ on section presented a caseous focus surrounded by a zone of intense hyperæmia. On microscopic examination, granulation tissue was found, but no tubercle, no giant cell, only an infiltration of pus cells around the caseous centre. Jürgens thinks it possible that the caseous mass might have been expelled naturally by the urinary passages, and the case might thus (had no other organ but the kidney been diseased) have been cured. In the liver there were the signs of fatty infiltration with retention of bile. Here and there were recent and old patches of hæmorrhage. In a few isolated points there were true tubercles with giant cells, and the whole organ was the seat of slight leukæmic infiltration. In the bones the medulla had to a large extent undergone diffuse hæmorrhagic softening; microscopic examination showed many giant cells but no bacilli. In a few places true tubercles were seen undergoing caseous degeneration. In the spleen and in the peribronchial and mesenteric glands, modifications of the tuberculous process similar to those described in the kidney and elsewhere were found.

---

(67) Koch's Treatment in Phthisis.

Professor Masius, of Liége, gives an account (*Annales de la Soc. Méd. Chir. de Liége*, De-

cember, 1890), of his experience with Koch's remedy in phthisis, tuberculous adenitis, and lupus. As the report only embodies the results of three weeks' treatment, it may be looked upon as merely preliminary. All the cases were treated in the Medical Clinic of the University of Liége. Professor Masius's conclusion is that "pulmonary phthisis in the first stage, glandular tuberculosis, and cutaneous tuberculosis are to a certain extent favourably modified." The general and local reaction was not always in proportion to the severity and extent of the lesions. In some cases in which tuberculosis was "scarcely appreciable, even doubtful," violent reaction followed the injection of 1 milligramme, whilst the same dose produced no effect in patients with "manifest tuberculous changes." In one such case a dose of 9 milligrammes was required to cause reaction. In the case of a patient suffering from pulmonary phthisis and nephritis, hæmaturia occurred after each injection. In one case the injections were always followed by increase of albuminuria from 0.75g. to 2 or 3g. per litre, though there was no rise of temperature. In some cases reaction showed itself in increase of cough and expectoration without any rise of temperature. In several cases the sputa became blood-stained; in others they became more mucous in character, and gradually less in amount, and the bacilli underwent "manifest modifications." Some patients gained, others lost, weight. But even when weight was gained, there was sometimes no change in the physical signs. In some cases the treatment seemed to cause increasing weakness and generally to exacerbate the disease. Masius sums up his results *en bloc* as follows:—Among 14 cases (which include 10 of phthisis, 3 of lupus, and 1 of tuberculous cervical glands), there has been "amelioration" in 5; "aggravation of symptoms" in 2; "no notable change" in 7. The latter, however, have not been sufficiently long under treatment for any definite statement to be made. In the case of a woman three months' pregnant, who was suffering from lupus, an injection of 1 centigramme was given on December 2nd at 10 A.M., and was followed by considerable local and general reaction. On the morning of December 9th an injection of 9 milligrammes was given; intense reaction took place, lasting twenty-four hours, and recurring the next day. There was an extensive scarlatiniform eruption, especially marked over the abdomen. At 5 A.M. on December 10th abortion took place, and the woman became so collapsed as to be in imminent danger of death. The patient recovered with some difficulty from the reaction and its consequences, but the result of the treatment on her disease could not be ascertained, as on the morning of December 13th she was "taken away by her family against the advice of the doctors."

---

(68) Koch's Treatment: Immediate Effects.

At a meeting of the Royal Academy of Medicine of Turin, on December 19th, Professor Bozzolo reported on the results obtained so far in his clinic with Koch's fluid (*Il Policlinico*, Dec. 23rd, 1890). It was tried in 7 cases, including 2 of moderately extensive pulmonary phthisis, 1 of doubtful tuberculosis, 1 of tuberculosis of the pleura, 1 of hip-joint disease, and 2 of lupus. The doses used were from $\frac{1}{3}$ to 5 milligrammes; undoubted reaction took place in the cases of lupus and in that of doubtful tuberculosis, but it was less marked in the phthisis cases. In 1 case it was not till twenty-four hours after the injection that reaction showed itself; Bozzolo thinks such delay may possibly explain the fatal accidents that have occurred, the remedy accumulating in the system while further injections are made in order to bring on the reaction which is "hanging fire." Rigors occurred in only 3 cases, and in 3 there was an extensive scarlatiniform eruption. There was generally marked swelling of the spleen, and in all the cases there was at first loss of weight, in one instance to the amount of nearly 5 kilogrammes; the more intense the reaction the greater was the loss of weight. As concomitant symptoms, albuminuria, acetonuria, epistaxis, and pain in the chest were observed. In a patient who had previously had a testicle removed for tuberculous disease the injection caused cough and hæmoptysis, though no pulmonary lesion had been detected nor any bacilli found; acute pain was also felt in the scrotal scar, which broke down, giving issue to pus containing bacilli. As regards the further therapeutic results of the treatment, Bozzolo can only say that one of the lupus cases shows notable improvement.

At the same meeting Professor Forlanini (*ibid.*) reported on the results of the treatment as observed in seven patients. One of these was in a most advanced stage of phthisis of both lungs; the disease had lasted nearly sixteen years. Five injections (from 1 up to 5 milligrammes) were given, but "up to the present with absolutely no effect of any kind whatever." Another was a young man, aged 22, with incipient phthisis of the right lung. The injections were begun with a dose of 1 milligramme, and were gradually increased in strength up to 5 milligrammes. Epistaxis occurred several times during the reaction. Locally, after the first injections, there was only an exaggeration of the catarrhal phenomena; after the 5-milligramme dose the infiltration, which was in the right supraclavicular region, seemed to diffuse itself so as to occupy almost the whole front part of the chest, there being at the same time dulness over the whole of the back. The auscultatory signs did not correspond with those yielded by percussion; the respiratory murmur was everywhere much diminished, but only here and there could bubbling or dry *râles* be heard. These conditions disappeared on the subsidence of the reaction. Forlanini is at a loss how to explain the physical signs, except on the supposition of a diffuse swelling of almost the whole parenchyma of the affected lung and bronchial tubes, without any collection of liquid in the latter. When the reaction ceased the greater part of the lung returned to its former condition, but the physical signs seemed to Forlanini to indicate "slight but definite improvement." The third case was that of a girl with extensive, but not advanced, phthisis of one lung, and tuberculous disease of the intestine; the latter condition was established by the presence of tubercle bacilli in the fæces. Seven injections (from 1 up to 7 milligrammes) caused no general reaction, nor was there any sign of reaction in the lungs, but there was severe abdominal pain, with profuse diarrhœa. Precisely similar effects were seen in the case of a woman with phthisis of both apices. Another case was that of a boy, aged 16, who had suffered from hip-joint disease since the age of 3, and in whom resection had been performed at the age of 6; he is now the subject of tuberculosis of the left testicle. Injections of Koch's fluid (from 1

up to 6 milligrammes) caused local reaction, not in the resected right hip, but in the glands of the left groin, of both axillæ, and of the neck, in which no disease had previously been suspected to exist. Forlanini points out that whereas before the treatment was commenced only very limited and deep fluctuation could be felt in the epididymis, after the injections were begun the purulent collection increased so rapidly that it had to be opened.

(69) Transfusion of Defibrinated Blood and Common Salt Solutions.

Dr. J. Marshall (Hoppe-Seyler's *Zeitschr. f. phys. Chem.*, November, 1890) says Bergmann has recommended the employment of a 0.6 per cent. solution of sodic chloride for transfusion; but it is not easy to understand what other purpose this can fulfil than the mechanical filling of the blood vessels, as the respiratory elements are wanting in the fluid. Landerer, on the other hand, employed blood for this purpose, its tendency to coagulate being hindered by the addition to it of a 0.6 per cent. sodic chloride solution saturated with carbonic acid. In this way, in spite of the risk due to the carbonic acid, very successful results were obtained. Landerer's experiments further showed that it is not necessary to introduce into the system the original number of the lost corpuscles in order to attain the wished-for result. Thus, according to him, the loss of two litres of blood could be rendered harmless by transfusing into the circulation a mixture of 400 cubic centimètres of blood and 1,600 cubic centimètres of a weak sodic chloride solution. In Dr. Marshall's experiments the general method employed was to bleed a rabbit that had been anæsthetised with ether until convulsions set in as the result of the loss of blood, and then to transfuse into it an equal volume of fluid consisting of one part of the defibrinated and filtered blood of the same rabbit, and nine parts of a 0.6 per cent. sodic chloride solution. The percentage of the hæmoglobin, as well as the number of red corpuscles in a cubic millimètre of blood, were estimated before and after the operation, and for several days subsequently. One only of these experiments will be here detailed, as the results varied very slightly in the rest. Rabbit: weight before operation, 2,270 grammes; blood removed, 38 cubic centimètres. Into the jugular vein 38 cubic centimètres of the mixture of defibrinated blood and sodic chloride solution were transfused in five minutes. Before the operation about 4,500,000 corpuscles were present in 1 cubic centimètre, and 13.4 grammes oxyhæmoglobin in 100 cubic centimètres of blood. After the operation the numbers were respectively 3,900,000 and 10.5 grammes. At the end of a week the number of the corpuscles was completely restored, while it was not until after twenty-three days that the hæmoglobin was raised to the same percentage as before the operation.

PHYSIOLOGY.

(70) Action of Methylene Blue on Living Nerve Fibres and Cells.

Since Ehrlich, in 1886, introduced methylene blue as a reagent for staining nerve fibres and nerve cells *in vivo* several researches on this subject have appeared. The following are the most recent: A. S. Dogiel, *Archiv f. mik. Anatomie*, xxxv, p. 305; Smirnow, *Archiv f. mik. Anat.*, xxxv, p. 407; Feist, *Archiv f. Anat. und Physiol.* Heft 1 and 2, 1890. The original method of Ehrlich was to inject the solution of methylene blue into the blood vessels of the animal. After a time it was found that the nerves and their terminations were stained blue. It suffices, however, to tease a part of an organ in a very dilute solution of the staining reagent ($\frac{1}{5}$ to $\frac{1}{5}$ per cent.), and in less than twenty minutes the axis cylinders of nerve fibres, the terminal nerve fibrils, and the nerve cells, should these be present, are stained. The blue colour appears when the tissue is freely exposed to the air, so that if the blue be injected into the lymph sac of a frog, the nerves, after an hour or two hours, may, when first exposed, not be blue, but after they are exposed to the air they assume a deep blue colour. The blue colour remains only a comparatively short time, but it may be "fixed" by placing the tissue in Hoyer's picro-carmine, or in a saturated solution of iodine in iodide of potassium, or in picrate of ammonia. Dogiel's research deals with the terminations of nerves in the muscles of amphibia and reptiles. So excellent is the method that the end-plates in the latter animals and the subsarcolemmal characters of the terminations of the nerve fibres are far more readily stained than by any of the gold chloride methods. Every muscular fibre possesses two or three nervous apparatuses, but, although there be several endings, these are usually supplied by one nerve fibre. Dogiel confirms the observation of Kühne that the hypolemmal terminations of the nerve fibre are only in contact with the sarcous substance. Smirnow deals with the nerve cells of the sympathetic ganglia in amphibia. It has long been contended that the pyriform sympathetic nerve cells of the frog possess a straight and a spiral process. Methylene blue affords a ready means of demonstrating the existence of the spiral process, whose existence has been denied by some observers. It arises by a number of pericellular fibres under the sheath of the cell; these unite to form a thicker fibre, which forms several turns round the straight fibre, and then the two fibres pursue opposite courses. The spiral fibre alone is tinged by the blue. All the spiral fibres in any nerve run in one direction, and the straight fibres in the opposite direction. It appears that the spiral fibres run in a peripheral direction. These peripheral fibres either unite with peripheral fibres from adjoining cells or they pass to muscles or to blood vessels, and it may be that some of the fibrils from one cell do all three.

(71) Cholesterin.

K. Obermüller (Hoppe-Seyler's *Zeitsch. f. physiol. Chem.*, November, 1890) says that of the homologues and isomers of cholesterin present in the animal and vegetable kingdom isocholesterin is the only one that has been accurately investigated and sharply distinguished from cholesterin itself. The evidence as yet is not decisive as to the adoption of the formula $C_{26}H_{44}O$, or $C_{27}H_{46}O$. The author's analyses of a series of salts of cholesterin gave the following: The potash salt corresponded more closely to the formula $C_{27}H_{43}OK$ than to $C_{23}H_{43}OK$; that of cholesterin propionate to $C_{27}H_{43}COOC_2H_5$; that of the benzoate to $C_{27}H_{43}C_7H_5O_2$; and that of the bromocholesterin propionate to $C_{27}H_{43}Br_2C_3H_5O_2$.

Printed and published by the British Medical Association at their Office, No. 429, Strand, in the Parish of St. Martin-in-the-Fields, in the County of Middlesex.